

## Analysis of Utilization of Renewable Biomass

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**Abstract:** In theory, causing the exploitation of renewable natural resources over time will be reviewed. Four types of exploitation systems in terms and conditions will operate in each set and will be exploited in this paper as a dynamic theory for the use of renewable biomass saved and the aforementioned theory of competitive systems, proprietary systems, social systems and personal systems universality of individual will. Theory exploitation of natural resources as renewable biomass in the general case for the present and future is reviewed.

**Key words:** Biomass • Fishing • Function • Analysis • Renewable • Utilization

### INTRODUCTION

**Fishing Cost Function:** Cost function of the amount of prey biomass and volume we consider as  $C_t = G(H_t, X_t)$  at time  $t$ , written in this function at time  $t$ , the amount of fishing with Biomass  $H_t$  and volume shown as  $X_t$ . Zero for two terms and costs as a function  $C_0 = G(H_0, X_0)$  and  $C_1 = G(H_1, X_1)$  are written, with increasing fishing costs increase, but with increasing biomass storage costs decrease and, therefore, derive a more positive cost benefit to the fishing rate more than the volume of biomass, but negatively [1-2].

### Total Net Present Value Benefit of Expectation:

The gross profit function for present and future function of the amount of time in fishing is assumed. Gross profit increased fishing increases the gross amount of the ultimate benefit. In the present and future time, gross profit as functions are both written as  $B_1 = B(H_1)$   $B_0 = B(H_0)$  and the ASC rates are subject to fishing production. Net benefits with the cost deducted from the total gross benefit are achieved. In the present and future time, net benefit is  $NB_0 = B(H_0) - G(H_0, X_0)$  and  $NB_1 = B(H_1) - G(H_1, X_1)$  are thus written. Total net present value of benefits expected is as we show below:

$$V = [B(H_0) - G(H_0, X_0)] + \frac{B(H_1) - G(H_1, X_1)}{(1+r)} \quad (1)$$

Where,  $r$  is the discount rate. To determine optimal  $H_t$  and  $H_1$ ,  $V$  function than bonds in relation to renewable sources such as biomass and we maximize it. Next, we describe these constraints [3].

### Constraints Related with the Amount of Stored Prey

**Biomass:** The amount of fishing in each period can alter the balance in the stored biomass and the biomass growth will maintain its biological balance. Volume of biomass in the future time when the volume is achieved in the present, with value of the fishing down and then add it to biological growth, so that the next volume of biomass is written as follows:

$$X_1 = X_0 + F(X_0) - H_0 \quad (2)$$

Where,  $F(X_0)$  is biological growth of biomass and biomass residues stored in the next time are summarized as follows:

$$Z = X_1 + F(X_1) - H_1 \quad (3)$$

Where, the  $Z$  is the value of the remaining sets. In this regard,  $F(X_1)$  Is biological growth of biomass as a function is shown. Biological growth of biomass increases in its storage in case the amount of fishing is reduced. If the natural growth rate of fishing is more, storing and otherwise increasing the storage of fishing is reduced. If this practice continues then biomass generation will become extinct over time [3].

**Shadow Price and Selling Price:** Each additional unit cost of two types of fishing, follow. If an additional unit of storage in biomass and fishing sales can be subject in the market, market prices will, but if fishing is not the same unit as in the natural environment, which remains protected storage, prices, will have a shadow. So each unit  $H_0$  and  $H_1$  in a competitive market price, respectively  $P_0$  and  $P_1$ , if each unit  $X_0$  and  $X_1$  shadow prices  $\lambda_0$  and  $\lambda_1$  have. So the  $P_1$  and  $\lambda_1$  next time and there are certain conditions with the same context [4].

**Determined Operation Conditions:** Assume an industry in the exploitation of works and the fish biomass is going to expect total net present value benefit to your storage constraints related to biomass in the present and future and thereby to this determines the maximum amount of fishing in the present and future time. For this purpose, from the Lagrange function, we form the following:

$$L = [B(H_0) - G(H_0, X_0)] + \frac{B(H_1) - G(H_1, X_1)}{(1+r)} + \lambda_0(X_0 + F(X_0) - H_0) + \lambda_1(X_1 + (X_1) - H_1 - Z) \quad (4)$$

Where  $\lambda_0$  and  $\lambda_1$  shadow prices per unit of storage  $X_0$  and  $X_1$  they are called Lagrange coefficients. To determine the optimal values  $H_0$  and  $H_1$  first order conditions using the Lagrange function, we write the following:

$$\frac{\partial L}{\partial H_0} = 0, \quad \frac{dB_0}{dH_0} - \frac{\partial C_0}{\partial H_0} - \lambda_0 = 0 \quad (5)$$

$$\frac{\partial L}{\partial H_1} = 0, \quad \left( \frac{dB_1}{dH_1} - \frac{\partial C_1}{\partial H_1} \right) (1+r)^{-1} - \lambda_1 = 0 \quad (6)$$

$$\frac{\partial L}{\partial X_0} = 0, \quad \frac{\partial C_0}{\partial X_0} + \lambda_0 \left( 1 + \frac{dF_0}{dX_0} \right) = 0 \quad (7)$$

$$\frac{\partial L}{\partial X_1} = 0, \quad \frac{\partial C_1}{\partial X_1} (1+r)^{-1} - \lambda_0 + \lambda_1 \left( 1 + \frac{dF_1}{dX_1} \right) = 0 \quad (8)$$

$$\frac{\partial L}{\partial \lambda_0} = 0, \quad X_1 = X_0 F(X_0) - H_0 \quad (9)$$

$$\frac{\partial L}{\partial \lambda_1} = 0, \quad Z = X_1 + F(X_1) - H_1 \quad (10)$$

In relation (5) and (6) gross profit with final  $\frac{dB_0}{dH_0} = MB_0$

and  $\frac{dB_1}{dH_1} = MB_1$  and the final cost of the percentage

$\frac{\partial C_0}{\partial H_0} = MC_0$  and  $\frac{\partial C_1}{\partial H_1} = MC_1$  respectively, in the present and

future times are displayed, as well as in relation (7) and (8) of the total cost of storage in biomass with  $\frac{\partial C_0}{\partial X_0} = MX_0$  and  $\frac{\partial C_1}{\partial X_1} = MX_1$  in order that present and future

times and efficiency are shown in the present biological growth and future time respectively as  $\frac{dB_0}{dH_0} = MB_0$  and

$\frac{dB_1}{dH_1} = MB_1$  are marked. Relationships (9) and (10) are

constraints relating to renewable sources, which are stored.

#### Shadow Prices in the Present and in Equilibrium:

In the present volume of biomass each unit  $X_0$  has its price  $\lambda_0$  is measured. The price of additional units that still belong to not save the fishing has remained in the relationship (9) as amounts  $X_0$  and  $H_0$  in the amount of the unknown fishing and  $F(X_0)$  is the size added to save the result as it is transferred to  $X_1$  in the next period. Value  $\lambda_0$  relationships (5) and (7) are unclear. According to relationship (5) value  $\lambda_0$  with the ultimate benefit is equal to the net and is written as follows:

$$V_0 = \lambda_0 \quad (11)$$

Where  $V_0 = MB_0 - MC_0$  net profit is the ultimate value of this increase as a result of hunting an additional unit of total gross profit on the one hand and on the other hand, the total cost of fishing is more, if the total gross profit increase of total costs in this case is  $V_0$  more then fishing will be positive. Relationship (7) is another concept of a shadow value we specify that it can be written as follows:

$$\lambda_0 = (MX_0)A(X_0) \quad (12)$$

Where,  $A(X_0) = \frac{1}{1+MF_0}$ . Value  $\lambda_0$  in relation (12) is an

additional unit of increase in biomass volume and arises from, on one hand, reducing the total cost of fishing and on the other hand, can reproduce, in the future, increases in the equilibrium shadow value  $\lambda_0$  of two different concepts according to relations (11) and (12) which are equal to them and we summarize this, as follows:

$$\lambda_0 = V_0 = (MX_0)A(X_0) \quad (13)$$

If you save an additional unit of prey biomass to a first, the gross profit  $MB_0$  and the cost of fishing  $MC_0$  will result as  $V_0$  and there comes a net benefit of the shadow value  $\lambda_0$ . Secondly, the additional storage units as an additional unit  $MX_0$  cost and thus  $MF_0$  reduces the size more. Biomass growth and the size show additional changes to the unit as a reduction in the value stored in shadow  $\lambda_0$  in relation (12) and creates the relationship (13) and this shows that the amount of fishing in the present and future times is determined so that the shadow value  $\lambda_0$  in both cases is the same concept. Otherwise, the amount of fishing between the two periods will determine the optimum [1-5].

#### Shadow Prices in Future Time and Equilibrium:

$\lambda_0$  As a shadow price per unit of storage resource and next we will show the value of relationships (6) and (8) we calculated using relationship (6) shadow price at the time of future net present value as the ultimate benefit and is written:

$$\lambda_1 = \frac{V_1}{1+r} \quad (14)$$

Where,  $V_1 = MB_1 - MC_1$  is the ultimate benefit of future net worth at a certain time and the next time when the shadow is in the additional unit, sales increase is created? Using relationship (6) a different meaning for  $\lambda_1$  is derived from the concept and so follows  $\lambda_0$ . If the amount  $\lambda_0$  of the relationship (12) in relation (8) we replace the concept  $\lambda_1$  and we achieve as follows:

$$\lambda_1 = (MX_0)AX_0 + \frac{MX_1}{1+r} A(X_1) \quad (15)$$

Where,  $A(X_1) = \frac{1}{1+MF_1}$  relationship is based on (15)

Concept  $\lambda_1$  when the biomass is stored in the present and future changes to the time, change works in the fishing and the cost function subject to biological growth arrive despite  $\lambda_1$  as the emergence of leads.

**Optimal Condition for Fishing Exploitation:** The concept of replacing the  $\lambda_0$  relationship (11) in relation (8) has a different meaning for  $\lambda_1$  and here shows as:

$$\lambda_1 = \left( \frac{MX_1}{1+r} + V_0 \right) \left( \frac{1}{A(X_1)} \right) \quad (16)$$

Thus  $\lambda_1$  in relations (14) and (15) and (16) show different concepts of the value of expression  $\lambda_1$  in their values. According to relationship (4) net present value of benefits

is final and based on the relationship (15) and its value in relation to the cost of storage function and growth function is unclear if the relationship (16) directly  $\lambda_1$  worth  $\lambda_0$  is expressed in the present. If in relation (16) if instead  $\lambda_1$  is used the same relation (14) to replace the requirement for optimal operation in two consecutive, following the relationship becomes:

$$\frac{V_1}{1+r} = \left( \frac{MX_1}{1+r} + V_0 \right) \left( \frac{1}{A(X_1)} \right) \quad (17)$$

In relation (17) final net profit in the present and future time are associated with this condition so that the optimal utilization, we determine the following:

$$\frac{V_1 - V_0}{V_0} - \frac{MX_1}{V_0} + \frac{V_1}{V_0} MF_1 = r \quad (18)$$

In relation to obtain (18) of  $\lambda_0$  and  $\lambda_1$  by relations (11) and (14) have been determined, is used to condition (18) renewable resources in the economy have been extremely important in determining the optimal operation.  $\frac{V_1 - V_0}{V_0}$  in

relative growth of final net benefit between the two terms is zero and an expression of its value may be positive or negative zero, if the biomass is positive for the exploitation of environmental assets income because income creates value to the current operation because next time there is an increased biomass component of environmental assets which is considered when exploitation where the increase in the ultimate benefits will result. Hence, the term  $\frac{V_1 - V_0}{V_0}$ . Environmental Finance

income for the agent is involved in fishing employment, is measured in words and shall be zero if this case will be  $V_1 = V_0 = V$ . In this context, the final net profit in the present and future will be with equal times and therefore the exploitation of additional income in the future is none existent. In this case, the relation (18) will become the following equation:

$$\frac{MX_1}{V} = MF_1 - r \quad (19)$$

In relation (19) the final growth is yielded and is equal to  $MF_1$  which is the difference in final yield with the net discount rate and is necessary to optimize utilization efficiency by reducing the total cost of the final net effect of increased fishing and an additional unit is equal to the stored biomass. If words  $\frac{V_1 - V_0}{V_0}$  were negative, in this

case it will be  $V_1 < V_0$ . In this context, the exploitation of assets less net environmental benefits will end and a

lower value will be created in the future. The second term in relation (18) is  $\frac{MX_1}{V_0}$ .

The storage of biomass is measured in the total cost for enterprise storage of biomass and no foreign agent controls it, because birth and death of natural biomass and location and place their lifespan under control. Hence, if the size of prey biomass is greater and therefore easier doing total cost is less and less biomass is stored and if more effort is needed for fishing, therefore, the total cost of fishing increases so much in relation to the second sentence (18) and effects of external factors on the total cost of biomass are measured. The third sentence in relation (18) equals  $\frac{V_1}{V_0}MF_1$ , the value of biomass growth

will determine the natural growth and biological biomass volume depends on the relative value of the said term shows increases in biomass biologically. General relationship (18) suggests that if this is related to each firm in the industry, each firm adds an additional unit of prey biomass to the present value of that unit until the next size  $\frac{V_1 - V_0}{V_0}$ , increases, because the amount of prey

biomass volume is reduced. Hence the operation unit volume of additional biomass to reduce the size and reduce total cost increases as  $MX_1$  and will affect the biological value of the relative value of its equal  $\frac{MX_1}{V_0}$ , on

the other hand an additional unit of fishing a biological growth function, which affects the relative value of it and is equal  $\frac{V_1}{V_0}MF_1$  to the total components of the relationship

(18) and interest rate or discount rate is equal until over two periods to determine the optimal operation. If the total cost function under the influence of prey biomass stored in this case should be prosecuted in relation (18) value  $MX_1 = 0$  as mentioned in relation to the results which are summarized as follows:

$$\frac{V_1 - V_0}{V_0} + \frac{V_1}{V_0}MF_1 = r \quad (20)$$

In the case of  $V_1 = V_0 = V$  where, the discount rate is equal to the yield growth that follows we will show that:

$$MF_1 = R \quad (21)$$

**Competitive Exploitation System:** I assume the environmental assets in the form of biomass competitiveness, industry by industry, total is exploited to present value profit than bonds and is considered the maximum amount of fishing this way for the present optimization and which the future brings. Competitive

system characterized in fishing is the price per unit by the fishing industry and cannot change its value, which will determine the competitive market mechanism. Therefore, in the present and future time, gross profit to gross income, which turned into and is written  $B_0 = P_0H_0$  and  $B_1 = P_1H_1$  thus the ultimate form of income  $MR_0^C = P_0$  and  $MR_1^C = P_1$  is determined because the amount of fishing has no communication with the market price and demand function for industry as a horizontal objective function of total present value of expected profits in competitive conditions and is written as follows:

$$V^C = [P_0H_0 - C(H_0, X_0)] + \frac{P_1H_1 - C(H_1, X_1)}{1+r} \quad (22)$$

Where,  $P_0$  and  $P_1$  are competitive market prices to determine the optimal  $H_0$  and  $H_1$  in function (22) are then the constraints (2) and (3) at maximum and the first order conditions are obtained. Shadow price of the conditions mentioned in the balance  $\lambda_0^C$  and  $\lambda_1^C$  is determined.

Shadow prices for each of two different types of measure are the first criterion, are the net present value benefit of the end among the different models and are different from each other in exploitation.

If the second measure of the cost of storage function and growth function comes into existence because I assume that the features and functions among the fishing fee is the same criteria mentioned, patterns among the patterns are the same shadow prices in the present and future times by the relationships (11) and (14) which are calculated from the final net present value benefits and abide by the final net benefit because the patterns are different relationships among the patterns which will vary with each other [4-6].

Competitive advantage rather than a function of total gross revenue function is being replaced and thus the market price of the final gross profit is net profit and the ultimate benefits will become final for the present and future time as the final profit  $V_0^C = P_0 - MC_0$  and  $V_1^C = P_1 - MC_1$  and Competitive is written using the relations (11) and (14) with shadow value per unit stored in a competitive situation will be as follows:

$$\lambda_0^C = P_0 - MC_0 \quad (23)$$

$$\lambda_1^C = \frac{P_1 - MC_1}{1+r} \quad (24)$$

The ultimate benefit relationship of the difference between the price and the final cost of the fishing is as if an additional unit of storage in live biomass remains

protected in the present value of its shadow with the final profit and present value of future time is equal to the ultimate benefit. Because the market price of the market interactions changes, it changes the value of the shadow changes. So impressed shadow value placed competitive market price, but the final cost of the fishing industry is controlled. If the improved production technology, followed by the final cost of fishing and therefore reduces the shadow value decreases, so not only reduces the competitive market price, but also improves the production technology are effective in reducing the shadow values of relationships (23) and (24) and we thus can write the following:

$$P_o = MC_o + \lambda_o^C \quad (25)$$

$$P_1 = MC_1 + \lambda_1^C (1+r) \quad (26)$$

Considering relations (25) and (26) shadow value of a share of the market price forms. If more shares shall be evident then the market price is over shadowed by the increasing share of final value fee fishing in the shadow share of competitive price decreases. Conversely, reducing the share value of shadow shares will increase the final cost. another concept of shadow values in the present and future time by the relations (12) and (15), respectively, is expressed in the aforementioned relationship of various operating systems have similar values because of the effect of stored biomass growth in biological function and cost function are due. If the cost of fishing in the attributes of these systems is the same amount  $MX_o$  and  $MX_1$  with different systems operating in the same manner. On the other hand, the ability to reproduce the population biomass of communication with no independent system because it is done by exploiting the population growth rate and depends on the biomass. Condition for optimal utilization of the competitive relationship (18) is achieved as follows:

$$g^c - \frac{MX_1}{V_o^C} + \frac{V_1^C}{V_o^C} MF_1 = r \quad (27)$$

Where,  $V_1^C = P_1 - MC_1$ ,  $g^c = \frac{V_1^C - V_o^C}{V_o^C}$  and  $V_o^C = P_o - MC_o$ , as well

as in relation (18). In relation (27) and leaving the first three components, which are a part of the value, is stated that the biomass as environmental assets and the exploitation of its asset value shall be the second component and represents the value of saving biomass and also the storage is considered as a foreign agent. Finally, the third component of the measured value that the population of reproductive biomass in person arises

in optimal conditions, these components of total utilization are equal to the discount rate. From relationship (27) an equation in the present market price competition is obtained as follows:

$$P_o = MC_o + \frac{P_1 - MC_1}{1+r} - \frac{MX_1}{1+r} + \frac{P_1 - MC_1}{1+r} MF_1 \quad (28)$$

In relation (28) prices in the present combination are composed of four components of the first component of the final cost of fishing is that by  $MC_o$ , the second component is  $\lambda_1^C = \frac{P_1 - MC_1}{1+r}$  and measured in

words is the present value shadow next time if an additional unit of volume of prey biomass in the present and not be put off till next time, when the present value of future exploitation, the ultimate benefit derived from such sales shall it be measured by the value of the third component costs which is a unit of reducing excess biomass can be produced in the storage component of this stored biomass as a foreign agent and tells you to save the cost of biomass which is of a greater economic efficiency created. Because it reduces the total cost of fishing is the fourth component of the product of two expressions  $\frac{P_1 - MC_1}{1+r}$  and  $MF_1$  is

achieved, the term  $MF_1$  and creation of additional units of reproduction, including the future tells that a fourth shadow value of future population growth in time is measured in general, if an additional unit of biomass stored in the present fishing and not be postponed until the next time, the question if the additional units as population biomass increases  $MF_1$ s and if caught and sold in a competitive market reaches the present value of profits it thus creates [6-9].

Exclusive industry is facing market demand function based on market demand with prices becoming more as demand decreases, so the inverse relationship between price and demand causes the user leverage its monopoly in the market put on display. Let the demand function for the time being as  $P_o = P(H_o)$  and  $P_1 = P(H_1)$  for next time, in this case as gross total income  $B_o = P(H_o)H_o$  and  $B_1 = P(H_1)H_1$  and thus written and final gross income, is calculated as follows.

$$MR_o = \frac{dB_o}{dH_o} = P_o + \frac{dP_o}{dH_o} H_o = P_o \left( 1 - \frac{1}{e_o} \right) \quad (29)$$

Where,  $e_o = -\frac{dH_o}{dP_o} \cdot \frac{P_o}{H_o}$  the demand elasticity to price is in the present time, future revenue for the final two is as follows:

$$MR_1 = \frac{dB_1}{dH_1} = P_1 + \frac{dP_1}{dH_1} \cdot H_1 = P_1 \left( 1 - \frac{1}{e_1} \right) \quad (30)$$

Where,  $e_1 = -\frac{dH_1}{dP_1} \cdot \frac{P_1}{H_1}$  price elasticity means demand in the next time the objective function is written as the present value of total profit expectation is formed as following:

$$V^m = [P(H_0)H_0 - C(H_0, X_0)] + \frac{P(H_1)H_1 - C(H_1, X_1)}{1+r}$$

The sole condition for determining optimum fishing time in the present and future than the above objective function constraints (2) and (3) maximum first-order conditions, we value every single shadow of biomass stored in the present and the future is achieved two values for each time a shadow of the first order conditions are obtained. For the time being by the shadow value of relationships (11) & (12).

In general, the value is calculated in relation to shadow (12) between the systems in operation does not change, but the shadow values in relation (11) changes in the patent system because the final benefit as exclusive benefit becomes final. Thus, relation in (11) the following is written exclusively in terms of.

$$\lambda_0^m = MR_0 - MC_0 \quad (31).$$

Where, the final income by relation (29) is expressed exclusively in terms of shadow price difference between the final revenue and spending is the ultimate fishing in the shadow price next time by relations (14) and (15) shadow price is determined by the relationship (15) set has been among the various systems operation does not change but a shadow price set by the relationship (14) exclusively in terms of changed it can be written as follows:

$$\lambda_1^m = \frac{MR_1 - MC_1}{(1+r)} \quad (32)$$

Where,  $\lambda_1^m$  the shadow price in future times shown based on the present value of benefits is determined by the final value  $MR_1$  and in relation (30) is defined. Condition for optimal utilization of biomass in terms of the exclusive relationship (18) is obtained as follows:

$$g^m - \frac{MX_1}{V_0^m} + \frac{V_1^m}{V_0^m} MF_1 = r \quad (33)$$

Where,  $V_1^m = MR_1 - MC_1$ ,  $g^m = \frac{V_1^m - V_0^m}{V_0^m}$  and  $V_0^m = MR_0 - MC_0$ .

In relation (33) the relative growth in terms of ultimate benefit exclusively by  $g^m$  has been measured. The growth in utilization of various systems is different if the foreign agent of biomass in the total cost of fishing  $MX_1$  and reproduction means  $MF_1$ . Operation is the same in different systems of relations as in (33) and the final equation for sole income is determined as follows:

$$MR_0 = MC_0 + \frac{MR_1 - MC_1}{1+r} - \frac{MX_1}{1+r} + \frac{MR_1 - MC_1}{1+r} MF_1 \quad (34)$$

Where  $MR_1 - MC_1 = V_1^m$  and profit is the ultimate monopoly.

In relationship (34) exclusive income exclusive finally shows in the present if an additional unit of biomass in the present case should be exploited. The unit cost function and growth function biologically in the future affect the time for fishing, because firstly it costs much as  $MC_0$  increases and  $MR_0$  the size. Second, the ultimate fishing income as additional units causes reduced volume of biomass, followed by total cost as  $MX_1$  in order to increase the value of it by  $\frac{MX_1}{1+r}$  is now measured.

Secondly, biomass volume reduction in time in the future affect the growth of biomass by  $MF_1$  the present value  $MF_1$  is determined and the final evaluation was based on profits, reflecting the effect of storage and equal is  $\frac{V_1^m}{1+r} MF_1$  an additional unit Raba if instead the operation in the present and future, when used in the present value of profits as the final part of the final revenue that makes up the initial period by  $\frac{V_1^m}{1+r}$ , is assessed.

## CONCLUSIONS

The present and future time to arrange a display with zero and optimal allocation of fishing, we have set. First, we assume that the natural growth of biomass has a fixed function between the desired patterns and is the same as Second Biomass size where fish size is considered as external factors and by fishing in the cost function affects the behavior of firms in the hunt in third optimization studied patterns in different conditions is achieved. That depends on their objective function. Raba objective function in a competitive pattern of total present value of earnings expectations if the competitive supply price is desired. Proprietary model, the total value of the objective function is now expecting profits in the monopoly of the applicant, the amount of fishing and the price is set at the same time. Total net present value of social surplus depends on the national planning objective function

represent the state in which the inverse demand function in a competitive market to calculate the net surplus of consumers and producers are used.

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#### REFERENCES

1. Sadegi Toosi, E. and A. Zati-Rostami, 2010. Wonderful Deliberation on the Economic Development of Wind Energy in Global Village. *Middle-East J. Sci. Res.*, 6(4): 408-411.
2. Zati-Rostami, A. and A.G. Ebadi, 2011. Numerical Analysis of Electrical Energy Production in Rubbish. *Middle-East J. Sci. Res.*, 7(1): 120-125.
3. Okaka, W., G.A. Migunga, J.W. Ngaira and J. Mbego, 2009. The national biomass energy policy communication campaigns for community access to sustainable renewable energy in east Africa, *J. Geol. Min. Res.*, 1(4): 05-110.
4. Fariku, S. and M.I. Kidah, 2008. Biomass potentials of *Lophira lanceolata* fruit as a renewable energy resource. *Afr. J. Biotechnol.*, 7(3): 308-310.
5. Zati-Rostami, A., H. Motameni and M. Alizadeh- Nozari, 2011. Economic and Technical Analysis and the Use of Geothermal Energy in Nano Materials. *Middle-East J. Sci. Res.*, 7(1): 115-119.
6. Zati-Rostami, A. and A. Pahlavan, 2009-2010. Analysis of Nanometric Filters and Their Applications in Waste Water Treatment. *World Appl. Sci. J.*, 7(Supplement 1): 64-67.
7. Rathore, N.S., N.L. Panwar and Y. Vijay Chiplunkar, 2009. Design and techno economic evaluation of biomass gasifier for industrial thermal applications. *Afr. J. Environ. Sci. Technol.*, 3(1): 006-012.
8. Onyemaechi Chukuezi, C., 2009. Gender and renewable energy in rural Nigeria. *Int. NGO J.*, 4(7): 333-336.
9. Zati-Rostami, A., 2011. Assessment of Trade Export Agriculture with Other Sectors in Development Programs in 2016. *Middle-East J. Sci. Res.*, 8(1): 102-106.